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## TRENDS IN MUNICIPAL AUTOMOTIVE PURCHASING

*To what extent are compact American and foreign automobiles replacing standard-size American automobiles? What are the relative operating costs of the small car as opposed to the standard-size vehicle? What are the advantages and disadvantages of a car with an automatic transmission? With an eight-cylinder engine?*

Automotive operating costs are of increasing concern to local governments. In June, 1959, MIS sent questionnaires to 64 cities for information on the use of small cars, automatic transmissions, and eight-cylinder engines for municipal service. Of the 28 cities<sup>1</sup> which replied, 15 indicated they are using small cars on either a demonstration or regular basis. Three states — California, Wisconsin, and Oregon — and one county, Metropolitan Dade County, Florida, also supplied information.

This report summarizes: (1) the experience of 15 cities, three states, and one county with automobiles that are smaller in size and weight than the standard low-price "big three" — Ford, Chevrolet, and Plymouth; and (2) the experience of 15 cities and one county, Sonoma County, California, with automatic transmissions and eight-cylinder engines. The report is based on information furnished to MIS on three main questions: (1) the advantages and disadvantages in the operation of standard-sized American automobiles as compared with the American compact car (American Motors Corporation's Rambler series and the Studebaker-Packard Corporation's Lark series) and leading foreign vehicles (Volkswagen); (2) the relative advantages and disadvantages in the use of the six-cylinder and eight-cylinder engine; and (3) the advantages and the disadvantages of the manual-standard gear shift and the automatic transmission.

Within each of these three questions an attempt has been made to outline the driving characteristics, operating costs, reasons for adoption of one choice over another, and the reaction of such groups as the city council, the public, and automobile dealers. As far as possible, comparative data are separated into police and nonpolice service.

A listing of municipal governments that have purchased smaller vehicles appears in Appendix A.

### Reasons for Study

In mid-1958 the Ford Motor Company, the General Motors Corporation, and the Chrysler Corporation jointly announced discontinuation of all special factory discounts previously allowed in the sale of passenger cars, small trucks, and commercial vehicles to state and local governments. The reason for this action was complaints of local automobile dealers that special factory discounts to municipalities adversely affected the price of used cars. The manufacturers announced that the discount to state and local governments was rescinded also because certain cities and states disposed of one-year-old vehicles at a profit, thus putting them in competition with used car dealers, and that the publication of bid tabulations by governmental units gave the public an erroneous impression

<sup>1</sup>Phoenix, Arizona; West Memphis, Arkansas; Burbank, Anaheim, Fresno, Long Beach, and San Diego, California; Grand Junction, Colorado; Fort Lauderdale, Hollywood, and Miami, Florida; Oak Park, Illinois; Louisville, Kentucky; Muskegon, Pontiac, Royal Oak, and Saginaw, Michigan; Hackensack, New Jersey; Raleigh and Winston-Salem, North Carolina; Cincinnati, Cleveland, and Zanesville, Ohio; Austin and Dallas, Texas; Richmond, Virginia; Huntington, West Virginia; and Beloit, Wisconsin.



of automobile prices. The three leading manufacturers never satisfactorily explained their action since the policy does not apply to sales to the United States Government or to private fleet operators.

The result has been that local governments are paying a higher price for cars in 1959 — how much higher is a matter of debate. Estimates of the increase, disregarding the increased price of 1959 models themselves, range from \$150 to \$400 per unit purchase, depending on volume. Since the local government now must deal directly with local dealers, the purchase price also depends on the extent of the dealer's desire to sell automobiles at a lower price to the city to achieve favorable public reaction and good will, to advertise his vehicles, to retain maintenance and service contracts, and to continue his business association with the city government. Nevertheless, cities purchasing a small number of passenger vehicles in an area which has restrictive competition probably found the purchase price of the 1959 models several hundred dollars higher as a result of the new policy.

The discontinuation of special factory fleet discounts served as an impetus to the growing awareness and reaction against the increasing size, weight, and power of the standard-size, low-priced, American car. Many city officials as well as private citizens have voiced dissent against larger-sized automobiles as being over-powered for routine hauling, short-distance local transportation, and utility purposes. Higher gas and oil prices, inflationary charges for maintenance and repairs, and premium parking spaces have adversely worked against longer, wider, and more powerful low-priced cars.

The success of smaller-size foreign vehicles and the American Motors Corporation and Studebaker-Packard Corporation's series of compact cars has led many cities and other governmental units to consider the use of similar vehicles, especially in nonpolice operations. Their size, maneuverability, and economic operation have created interest among budget-minded municipal administrators.

Along with the obvious operating economy in most cases, the suggested list price is \$150 to \$500 lower than on the standard models in the "low price" series of the larger manufacturers.

City officials are interested not only in size of vehicles but also in the advantages and disadvantages of six- and eight-cylinder engines and manual and automatic transmissions. City officials are weighing the lower purchase price and lower repair and maintenance costs of the manual shift, six-cylinder car against the performance, convenience, and power of the eight-cylinder engine with automatic transmission. The latter type of car will cost up to \$300 more for a comparable make and model.

#### Large Cars versus Small Cars

Public officials have been turning away from the standard-sized American automobile and testing and operating the smaller foreign and American models. The attraction has been low operating costs, simplicity of design and mechanics, and easy accessibility to engine.

The success in sales and public acceptance of a smaller car, both foreign and American, have spurred the larger manufacturers to enter the small car field. Chevrolet dealers are expected to get the Corvair, General Motors' entry into the compact car field, in September; in October, Ford dealers will get the Falcon; and later that month the first Valiant will be shown in Plymouth dealers' showrooms.

Foreign distributors, such as those of Japan, England, Sweden, and Germany, are increasing their production of small cars and are receiving greater attention from economy-minded municipal officials.

Utility firms are showing increasing interest in the Checker Superba, widely known as a taxi but available for fleet application. It is roomy inside, easy to enter and leave, and is more than a foot shorter and about half a foot narrower than the standard big three cars — and is six inches higher. This is of particular importance to municipalities which have storage problems but still wish to have a roomy car which facilitates the transportation of equipment.

The Electric Storage Battery Company, Philadelphia, is assisting in engineering planning for the first new electric vehicles scheduled to appear late in 1959 — the C-V electric delivery truck



and the Charles Town-About, a battery-powered automobile. C. F. Norberg, ESB president has stated that, "The company is supporting these efforts continuously, not only because of the obvious market which would be created for batteries, but also because electric vehicles in many modern uses have real advantages in terms of economy, performance and convenience."<sup>2</sup>

These developments in the automotive world show a trend toward diversification in the purchase of automobiles — a diversification borne out by this survey.

Information supplied to MIS by local governments and automobile dealers shows an increase in the testing and use of small cars for nonpolice operations. "Economy" cars have been readily available on the market, and state and local governments have been buying them in large and small lots all over the United States. The Studebaker-Packard Corporation reports that at least 20 states, 130 cities, and 40 counties have purchased 1959 Studebaker Larks.

In setting up specifications, cities report the importance of considering the following factors in deciding between use of a small car or standard "big three" fleet cars:

1. Type of service desired.
2. Daily operating cost, including gas, oil, and lubrication.
3. Size and power needed for routine performance.
4. Major maintenance, repair, and replacement cost.
5. Durability under several types of operation.
6. Trade-in value.
7. Other factors such as safety, comfort, ease of operation, maneuverability, and acceleration and speed.

The economy cars being purchased are chiefly of American make, but some are foreign. They are, for the most part, two to three feet shorter than the most popular low-priced Detroit models, which are more than 17 feet in length.

Cities reporting the use of small cars for municipal purposes cite the ease of driving, parking, and housing a small car; lower initial cost; and lower operating cost.

Of prime importance in the purchase of an automobile is the price received on closed bids. Today's automobiles are bigger, wider, more powerful — and expensive. The 1959 low-priced, "big three" car sells for over \$2,000, plus several hundred dollars for optional equipment and accessories.

Likewise, city officials in purchasing automobiles are concerned with operative and overhaul expenses. Prices have increased on gasoline, oil, spare parts, maintenance, and labor. Standard American cars with large fenders, windows, and tires are expensive to maintain and operate.

Municipalities utilizing small cars in their fleets generally agree that compact and imported cars cost less originally, and model changes are minor, thus keeping retooling costs down. Less material is used in a small car, and in the case of imports, foreign labor is cheaper than our own. Peterson, Howell and Heather, a long-term fleet management service, found that in running costs, the small cars average about 1.0 cent per mile less than the three standard fleet cars.<sup>3</sup> Repair costs and insurance rates also are generally less for the small car.

Depreciation and resale value is a vital factor in a municipality's decision to use small cars. A major point in the big three's favor is the stability of trade-in recovery. Small American and foreign cars used in fleets may not bring the resale return percentage of the leading big three cars. This holds true especially if the big three car is the top-line hard top with an eight-cylinder engine and automatic shift which is traded at the optimum figure of 35,000 to 40,000 miles. This model costs more originally but it depreciates proportionately less than its cheaper versions.

<sup>2</sup>Gray & Rogers, "Country's Leading Battery Maker Betting on Automotive Revolution in Backing New Electric Vehicles" (news release, April 15, 1959, unpagged).

<sup>3</sup>William F. Hallstead, "Small Cars or the 'Big Three' for Fleet Use?" *Public Works*, April, 1959, p. 134.



### Foreign Cars

Along with the general trend toward the use of smaller cars for municipal purposes, the purchase and use of foreign cars has been considered by many municipalities. The following foreign automobiles are most often used as fleet cars: Anglia (and the four-door Prefect) and Consul, made by Ford Ltd. in England; Volkswagen, made in Germany; Metropolitan, made in England for American Motors; and the Vauxhall Victor, made in England by a General Motors subsidiary. For those cities which have foreign cars in operation, the Volkswagen is by far the most popular, with a scattering of other makes.

Of the cities contacted by MIS, only five reported directly on the use of foreign-made automobiles. Cleveland, Ohio, stated that it was not the policy of the city to buy foreign cars. The city buyer for Louisville, Kentucky, said that at the time bids were being accepted for small cars, the Consul, Opel, Peugeot, Dauphine, and Volkswagen were offered, but all at higher prices. Opposition was encountered from the public and the city council against the purchase of imported cars.

Metropolitan Dade County, Florida. The purchasing agent, Metropolitan Dade County, said that the county has Volkswagens and Hillmans in operation on a limited scale. Although foreign cars came in on bids at a slightly lower price than American small cars, the feeling of the officials was that for large fleet purchases the county should stay with primarily domestic manufacturers for sound economic and practical reasons: in case of trouble overseas, the parts situation could become critical.

Fort Lauderdale, Florida. R. K. Lowry, purchasing agent, Fort Lauderdale, stated that during the first six months of 1959, the municipality purchased two English Fords and two Volkswagens which are being used by inspectors and department and division heads where local transportation only is the prime requisite.

Lowry pointed out that the city has not had the cars long enough to give them a real test but that experience to date has been good. The individuals to whom the cars have been assigned have not complained, and all seem to like them. The public showed some reaction against the purchase of small cars, although the reaction was not serious; the local press did not oppose the purchase. Maintenance costs were found to be low. The English Fords are getting 20-25 miles per gallon and the Volkswagens 30-35 miles per gallon. Fort Lauderdale, because of a favorable reaction to the use of small cars, is considering adding more small vehicles where local transportation is the prime requirement.

Richmond, Virginia. The most extensive use of small foreign cars has been in Richmond, Virginia, in an effort to reduce automotive expenditures. This effort was intensified in the summer of 1958 when the three major American automobile manufacturers announced they were discontinuing factory discounts to state and local governments. Richmond estimated that this policy added approximately \$300 to the cost of each vehicle purchased.

Richmond purchased its first small car, a Volkswagen, in August, 1956. On the basis of its good performance and low operating cost, eight more Volkswagens were purchased in July, 1957, and 13 more were added in July, 1958. As of April, 1959, a total of 20 Volkswagens were in use. Richmond has also purchased, for test purposes, a four-door Hillman Minx Special sedan, a two-door Hillman station wagon, and five Rambler American sedans.

The vehicles are assigned throughout the city service and are currently being operated by social workers, probation officers, public health nurses, home care medical interns, food sanitarians, building maintenance foremen, auto messengers, refuse collection foremen, survey men, civil engineers, and building, plumbing, electrical, boiler, air pollution, and weights and measures inspectors.

It was estimated that a saving of \$325 was effected on the purchase of a Volkswagen in July, 1958, when this unit was purchased for \$1,425, while a middle line big three six-cylinder standard transmission car had a low bid of \$1,750.

Resale value, a factor often considered more favorable for the standard American car, has proven to be good although results are very limited. Only one small car, a Volkswagen which was purchased in August, 1956 on a negotiated basis for \$1,172, was sold in January, 1958, for \$1,150.



Operational costs of the foreign cars are excellent. The operating costs per mile of the 20 Volkswagens in service ranged from 1.1 cents to 5.4 cents. The mean average cost per mile was 2.3 cents while the median cost per mile was 1.9 cents. Miles per gallon ranged from a low of 14.0 to a high of 30.8, with the average miles per gallon, 22.2. The costs were poor for two cars because of clutch and transmission repair; in both cases the car was used in a pool.<sup>4</sup>

In comparison 17 Fords and Chevrolets showed an average cost per mile of 3.3 cents and gave an average of 13.3 miles per gallon.

In operating the Volkswagens the most favorable comment came from agencies which assigned the individual vehicles to full-time drivers. Dissatisfaction has come from those agencies where a single Volkswagen is used as a pool vehicle along with regular six-cylinder, standard transmission units. Over-all experience has been that driver reaction is favorable as drivers become familiar with the operating characteristics of the smaller car.

Burbank, California. This city has had a Nash Metropolitan in operation since September, 1958, and Chief of Police Rex Andrews reports it has been generally successful. It has been used primarily for parking control of posted zones and to issue some moving citations. It was purchased because its cost compared favorably with a three-wheel motorcycle, and it was less expensive than similar small cars.

Advantages cited are: low cost, all-weather operation, greater safety, and greater usefulness for other purposes. Reactions of employees and other officials has been good.

The Nash can carry two men and is equipped with siren, red light, shotgun, and other equipment used on full-sized patrol units. It has a speed of 70 miles per hour and has a right-hand drive enabling an officer to write citations without getting out of the car.

#### Studebaker Lark

Nine cities, one county, and one state reported the use of the Studebaker Lark for municipal service. Of this number, Metropolitan Dade County, Louisville, Hackensack (New Jersey), and Cincinnati, have used the small cars for police work, although only Hackensack uses the Lark for patrol duty.

All of the cities purchased the cars to effect economies in city automotive operations while two — Hollywood, Florida, and Cincinnati — cited the dropping of factory discounts by the big three automobile manufacturers as a significant factor in their decision.

Advantages cited for the Lark are: initial low cost, cited by 10 cities; low operating cost, eight cities; facilitated storage, two cities; and ease of handling and better maneuverability, one city. In addition to concurring on all three points, the State of California listed several other advantages: (1) the 15-inch wheel provides longer wearing tire at less cost than the 14-inch; (2) windshields have less wraparound and less distortion; (3) more brake lining per square inch for weight than standard size automobiles; and (4) more horsepower per pound than the standard six-cylinder car.

Most of the cities stressed the point that comparison of operating costs are on a limited scale and further usage of the cars will have to be made before a conclusive comparison with standard cars can be made.

Disadvantages cited were the smaller amount of luggage space; the location of the brake master cylinder which made repair difficult; and the general feeling that the Lark was unsuitable for police patrol.

Hollywood, Florida. In February, 1959, Hollywood purchased on an experimental basis the new Studebaker Lark to be used for test purposes as a police vehicle. The purchase price was \$1,792.82 for a 1959 deluxe, eight-cylinder, four-door sedan with standard transmission. The Lark was originally to be used for patrol duty but has actually only been used as a detective vehicle. This was due to inconvenience in transferring radios.

<sup>4</sup>Alan F. Kiepper, "Richmond's Experience With Small Cars," *The Municipal South*, July, 1959, pp. 22-23.



Driver reaction to the new vehicle has been favorable, and the men seem well satisfied with its performance. City council was favorable toward the purchase of an American-made vehicle, although they expressed unwillingness to purchase a foreign car. The car presently has been driven 6,900 miles without any major repairs; detailed operation and maintenance costs are not available.

Recently the city accepted bids for eight new police patrol vehicles and eight new administrative pool vehicles. Specifications limited bids on police cars to the make of the three larger manufacturers, but specifications for the administrative pool cars allowed the Lark and Rambler American to make bids as an alternate. Because the difference in cost between a big three model and the Lark was only \$165.02 per car, the bid from one of the big three was accepted because it was felt that the small difference in purchase price would be regained at the time these vehicles were traded in.

Metropolitan Dade County, Florida. Metropolitan Dade County purchased 150 Studebaker Larks, a step that was taken because the county was looking for an economy car that would also give good service. The Larks purchased were six-cylinder, four-door sedans with standard transmissions; cost was \$1,595.90 each. The Lark was bid at \$130 lower than the nearest car of the big three and was \$26 more than the Rambler American.

These Larks are being used as pool cars and have been assigned to practically all divisions of the county. They are assigned to "high mileage, frequent stop" drivers such as inspectors and department heads. They have also been assigned to the detective and plain clothes divisions of the public safety department.

The county purchasing agent cited the advantages of the Lark as easy handling in heavy traffic, good gas mileage, low operating costs, and easy parking in congested areas. The county feels that the car is very tight, having almost no rattles; has good brakes; an excellent engine; and that since parts, such as fenders, are easily removed for repair, the Lark has an advantage over the Rambler American.

Employee reaction to the cars was not too good initially, because of inexperience in handling smaller cars. At present, however, employees are well satisfied. Public reaction to the purchase of small cars was excellent.

Louisville, Kentucky. Louisville has some Studebaker Lark six-cylinder, standard transmission cars for use in the transportation department; and some Studebaker Larks with eight-cylinder engines and automatic transmissions for the police department. Louisville reports that the Lark gives an average of 22 miles per gallon and that it is less costly to operate and maintain than a standard-size car. Both departments which use this car have requested the purchase of additional small cars.

Fort Lauderdale, Florida. The purchasing agent reports that experience with two Larks has been good and that maintenance costs have been low. The Larks are getting 18 to 20 miles per gallon. Local reaction against the purchases of small cars was not serious; and the city is considering adding more small vehicles to their fleet where transportation only is the prime requirement.

Raleigh, North Carolina. The city purchased two Larks as an experiment to see how operational costs would compare to the standard American car. One of the cars was assigned to water meter reading division and the other to the division of inspection. Reaction to the cars is favorable. The city council, although not oversold on the idea, has been willing to experiment with the cars. Both the public and the automobile dealers are noncommittal.

Hackensack, New Jersey. The city has purchased a six-cylinder Lark for use by the police department in patrol operations. No disadvantages have been found to date, and the employees report that pickup is lively and parking is easier.

Zanesville, Ohio. In April, 1959, Zanesville purchased a Studebaker Lark for use by the director of public works. The city was interested primarily in basic transportation within the city and they wished to make comparisons among various makes. The Director indicates that he is well pleased with the car although it does not have power and pickup equal to the Rambler American, which he has also driven.



Cincinnati, Ohio. Cincinnati used Studebaker Larks on an experimental basis and assigned them to various divisions of the public works department, water works department, health department, and the safety department. Reaction to the use of small cars was good. It was felt that lower initial cost, increased gasoline mileage, and good performance were the prime reasons for taking bids on small cars. Cincinnati reported disadvantages of the small cars were that, in a few instances, space to carry equipment was inadequate and that the cars were too small and light for police patrol. In June, 1959, the city approved contracts for the purchase of 40 Larks.

Cleveland, Ohio. On April 23, 1959, Cleveland opened bids for the purchase of 54 automobiles to be used in various divisions of the city. Awards were made for 47 Larks. The decision to open bids to small cars was the result of satisfactory performance on the part of these cars during trial use.

Phoenix, Arizona. The city has purchased six Larks which have proven so satisfactory that the city will lower its horsepower requirements to allow small car dealers to submit bids on any future automobiles purchased by the city.

State of California. The state has purchased 291 eight-cylinder Larks which have been assigned to virtually all state departments except the highway patrol and the department of public works. Two disadvantages were experienced in the operation of the Larks: the smaller amount of luggage space and the location of the brake master cylinder under the floor board which is inconvenient to check when servicing.

Advantages are shorter over-all length which makes for easier parking and storage, easier maneuvering in traffic, more versatility in off-the-road operations, more brake lining per square inch for weight than standard-size automobiles, and good factory quality and dealer make-ready.

Gas mileage with a V-8 engine and standard transmission has checked out at an average of 19.10 miles per gallon and 18.07 miles per gallon with the automatic transmission.

#### Rambler American

Seven cities are using the American Motors Corporation's Rambler American. Only one city, Miami, utilized part of their Rambler fleet for police duty. Miami reported, however, that it found the use of small cars by the police department to be too expensive.

These cities reported that they bought the Rambler to effect economy and had found that its greatest advantages were low initial cost, ease of operation, maintenance, and maneuverability, and economy of operation.

Two cities — Louisville, Kentucky, and Zanesville, Ohio, stated that the Rambler solved a serious storage problem occasioned by the increased size of the big three cars.

Dallas, Texas. Dallas, Texas, has used 20 Rambler six-cylinder cars with standard transmissions since February, 1959. The sole motive for buying the Ramblers was economy of operation. These cars have been assigned to the building inspection division, the water service division, and the tax department. Employees reaction to the Rambler has been uniformly good, particularly because of its maneuverability in traffic and ease of parking. City council and public reaction to the proposed purchase of the Rambler was good. The unit cost for the Rambler was \$271 less than was asked for similar models in the regular-sized car. Gasoline mileage thus far has averaged 25 per cent more per gallon than the standard-sized six-cylinder automobile. Over an estimated life of 60,000 miles this would amount to \$160 per unit in savings for fuel. Trade-in value will probably be the same as conventional-sized cars since the city does not replace their vehicles until 60,000 miles or five years. Over-all estimation is that the city can operate the Rambler for 1.0 cent per mile less than conventional-sized vehicles. If the estimate proves to be accurate, the city can save as much as \$600 per unit on these cars over their expected life span.

Hackensack, New Jersey. Hackensack purchased two of the smaller-type cars: one a Lark to be used in the police department, and the other a Rambler for the health department. This was done to determine economy of operation and general performance.



The Rambler American is a six-cylinder, standard transmission car, used by the visiting nurse in the health department. The economy of the car has been proven in maintenance in that it takes four quarts of oil instead of the usual five; smaller tires; lower cost of tire replacement; and lower cost in the replacement of vehicle spare parts. Over-all performance and operation has been satisfactory for the city's needs.

Austin, Texas. Austin has purchased 11 Rambler Americans because of the discontinuance of the "big three" discounts to municipalities; the hope that they would make substantial gas savings in the operation of the cars over a period of time; and the hope that they would be able to save money on the purchase price. Generally the employees using the cars are well satisfied, and several have expressed preference for another Rambler. The main complaint is that they are hard to get in and out of, especially when the driver is engaged in an occupation like meter reading. The city council was quite willing to go along with the purchase of the small cars as an experiment in economy.

Louisville, Kentucky. Louisville reports that it purchased several Rambler Americans because the standard-size car had outgrown the city's available garage storage space. The transportation garage was originally designed to hold three cars per stall, but it can accommodate now only two standard-size cars. The city also anticipated that operating and maintenance cost would be considerably less for the smaller car.

The employees operating these cars were enthusiastic in their approval and reported no disadvantages. The advantages experienced with the small cars have been less operating cost, less maintenance cost, more easily parked on the streets and in the garage, and more maneuverability on city streets. Both the transportation and the police departments have submitted requisitions for the purchase of additional small cars.

Miami, Florida. Miami has purchased 16 Rambler American cars with standard transmission for use in nonpolice work by high mileage-frequent stop drivers, primarily building inspectors, tax appraisers, and others. Employees are pleased with the performance of the Rambler and report that they are getting between 16.2 and 26.8 miles per gallon with an average of 19 miles per gallon on the 16 cars.

Huntington, West Virginia. The city owns five Rambler Americans. The cars are used in the department of public works by inspection, engineering and sewer crews. No disadvantages of the small car have been found, and employees found that they are more maneuverable in heavy traffic than larger cars. City council and the general public voiced their approval of the purchase.

Zanesville, Ohio. Zanesville has two Rambler American cars in operation at this time, and they are being used by the city manager and the water superintendent. No extensive analysis is available at this time, although all concerned are pleased with the small cars, particularly in traffic.

#### Sixes and Eights; Standards and Automatics

Many municipal officials are concerned with the relative merit of six-cylinder and eight-cylinder engines for general municipal use. The advantages of the six are: it initially costs less, an average of \$100 less than an eight-cylinder engine; it is lighter in weight and has easier access for repairs; it has better fuel consumption; tire costs are less because of better tire capacity; and fewer brake adjustments are needed. Because of its lightness and simpler engine, the car proves easier to handle and in heavy traffic allows for better control.

Disadvantages of the six-cylinder engine are that it makes more noise than an eight and has less power for rapid acceleration, hill climbing, and heavy duty operation. It is less durable than an eight for hard, continuous usage such as police patrol. A six-cylinder engine has slightly less dollar return in trade-in value than an eight-cylinder engine vehicle.

The most significant difference is the added power of the eight. In police work, this power usually is deemed necessary, especially in gaining rapid acceleration for pursuit. Economy of operation seems to be a more significant factor than initial cost in the determination of whether to purchase a six or eight for nonpolice duty.

Municipalities studying automotive operating costs also are examining the relative advantages



of cars equipped with automatic transmissions as compared to vehicles with standard gear shift. Automatic transmissions are expensive, \$150 or more than the manual shift; are heavy, adding weight which works against acceleration and hill-climbing ability; and, at times, are inefficient particularly in traffic, thus resulting in fewer miles per gallon.

In conducting its survey of municipalities which had experience with both types of gears, MIS found that most cities prefer automatic shifts in police automobiles because operational and repair costs are less and because the officer in the car is better able to attend to his assigned duties. Since police cars are utilized on a 24-hour basis and driven by different types of drivers, the possible abuse to clutches and transmissions is a problem. The automatic transmission is much less subject to possible abuse, and the need for frequent repairs has been greatly reduced.

Winston-Salem, North Carolina. In July, 1958, A. C. Shepherd, city purchasing agent in Winston-Salem, North Carolina, conducted a survey of 40 cities in the United States to determine the soundness of the contention that lower operating costs are effected by the decision to use eight-cylinder cars for all police use and six-cylinder cars for nonpolice work.<sup>5</sup> Out of the 40 cities reporting, 36 used eight-cylinder cars for police work. For nonpolice work 22 cities use six-cylinder cars only, 10 use eights, and six use both.

The reasons advanced for purchasing eight-cylinder cars for police use are as follows: higher top speed; quick getaway; better service; more horsepower; higher resale value; and ability to cope with speeders.

The six-cylinder car is the choice for all departmental work other than police for several reasons: economy of operation; cheaper initial cost; better gasoline mileage; better tire mileage; elimination of clutch, transmission and drive shaft trouble due to lower horsepower; mechanics' time made easier; and economical transportation desired rather than power or speed.

San Diego, California. The director of public works reported that he is well satisfied with automatic transmissions. He explained that many of their cars operate from pools and there are many people today who have never driven a car with a clutch and manual transmission. They found that the automatic transmission compensates for many poor driving habits that otherwise show up as clutch, transmission, and drive-line repairs. They also feel that the automatic transmission is safer in heavy traffic.

Richmond, Virginia. Richmond has adopted automatic transmission cars for all police use and standard transmission cars for all nonpolice work. A study by the Budget Bureau showed lower operating costs under this system.<sup>6</sup>

The operating cost of automatic transmission, eight-cylinder cars in police use was 1.4 cents per mile lower than for the standard transmission eights.

In nonpolice use, the operating costs for automatic transmission, six-cylinder cars was 1.0 cent per mile higher than for the standard transmission, six-cylinder cars.

Richmond has concluded that the policy of using standard transmission, six-cylinder vehicles for nonpolice work is more economical. Because of the light use and low mileage of nonpolice vehicles, there is little reason to believe that use of eight-cylinder, automatic transmission vehicles would result in lower operating costs than six-cylinder standard transmission units.

R. B. Elmore, budget officer for Richmond, in the 1956 report outlined two main factors which contribute to the lower operating cost of eight-cylinder, automatic transmission vehicles in police work:

1. The majority of police vehicles are in service 24 hours per day. Each of these 24-hour cars has a minimum of 3 drivers (normally 5 or 6 in two-man cars because officers switch duty). In any situation where several people, each with different driving habits, drive the same vehicle, the wear and tear on the vehicle, particularly the clutch and transmission, is bound to be greater than where vehicles are used most of the time by one individual, as is true in general City use.

<sup>5</sup>A. C. Shepherd, "Municipal Vehicles: Six or Eight-Cylinder Engines?" *The Municipal South*, July, 1958, p. 25.

<sup>6</sup>Alan F. Kiepper, "Standardized Transmissions for City Cars," *Public Management*, November, 1957, p. 261.



2. The long hours of driving, particularly at low speeds and in traffic, are very fatiguing. As fatigue increases attention to the requirements of good driving decreases, with a resulting increase in the abuse of vehicles. The use of automatic transmissions not only reduces fatigue, but the possibility of misusing the transmission is reduced, compared to comparable opportunity in standard transmission vehicles.<sup>7</sup>

Anaheim, California. Eight-cylinder automatic transmission cars are used by the police department while six-cylinder, standard transmission cars are driven by nonpolice units. Operating costs including maintenance, depreciation, insurance, and overhead were computed enabling a comparison of the two systems. Results show the *total* cost of the police cars to be 11.10 cents per mile and for nonpolice units, 7.98 cents per mile. These costs include direct operating costs plus depreciation, insurance, and overhead.

West Memphis, Arkansas. West Memphis reports that its fleet includes the following makes: Buick, Oldsmobile, Pontiac, Chevrolet, Ford, and Plymouth. It has found the first three makes expensive to operate — high initial cost, high depreciation, and expensive operations and maintenance. The city therefore no longer purchases these makes of automobiles.

The city found its most economical nonpolice operations are from six-cylinder vehicles of the big three variety. For police work, however, the automatic transmission, eight-cylinder Ford or Plymouth is reported to last longer, with considerably less maintenance.

Oak Park, Illinois. During the past five years, Oak Park has standardized on six-cylinder engines for general nonpolice cars. The six-cylinder engine is preferred because it is easier to maintain and more economical to operate. It was felt that the six-cylinder engine is unsatisfactory in a station wagon because it does not provide the necessary power. Oak Park does not recommend the six-cylinder engine for police work since it does not provide the necessary pickup. The director of finance, indicates that for all nonpolice work the six-cylinder engine is satisfactory since eight-cylinder engine cars use more gasoline.

The village has automatic transmissions on all police cars and manual shifts on all general cars, with the exception of one car which is being used for special purposes. Oak Park has found that where older persons are using cars the automatic transmission is preferred since an older person has a tendency to ride the clutch which keeps maintenance costs high.

Muskegon, Michigan. Muskegon uses six-cylinder cars for general, nonpolice use and eight-cylinder cars for police work. Automatic shifts are used on all eight-cylinder cars for police work and city officials' cars. Six-cylinder, manual shift cars are used for most other work. In comparative costs for maintenance and operations, a six-cylinder was found to run about 25 per cent less than an eight-cylinder. The automatic transmissions cost approximately 40 per cent less to maintain during the first 50,000 miles; after 50,000 miles the costs run comparable to standard transmissions.

Fresno, California. The city uses six-cylinder 1959 Fords for all nonemergency vehicles; police and fire department automobiles are eight-cylinder 1959 Plymouths. All of the city's cars have automatic transmissions.

The greatest advantage gained from six-cylinder engines is in economy of operation, mainly gas mileage. On the other hand, the advantage of the eight-cylinder engine is the fast pickup. Automatic transmissions have the advantage of easier starting and stopping and lower repair costs. Comparative cost data provided by Fresno indicates that over a two-month period the police department experienced significantly better results with the eight-cylinder, automatic transmission cars than with the six-cylinder, standard transmission cars.

Royal Oak, Michigan. The city uses six-cylinder cars for general nonpolice service and eight-cylinder cars for police department work. All cars, police and nonpolice, have automatic transmissions. No disadvantages have been found in the use of six-cylinder cars for general city work such as inspection and supervision. The eight-cylinder cars are engaged in police patrol and require more maintenance due to round-the-clock operation.

<sup>7</sup>Budget Bureau, Richmond, Virginia, "Comparison of Operating Costs Automatic vs. Standard Transmission Vehicles," November, 1956, p. 3.



In 1955, Royal Oak changed from the use of standard transmissions to automatic shifts, a procedure they report to be advantageous because maintenance costs are less and police operations have improved. On six-cylinder cars it has been found that maintenance is 25 per cent less on cars equipped with automatic transmissions.

Beloit, Wisconsin. Beloit uses six-cylinder, standard transmission cars for all city work. Experience showed that a six-cylinder car equipped with automatic gear shift was inefficient due to the lack of power.

Saginaw, Michigan. Saginaw uses six-cylinder cars with standard transmissions for all city services. They have found that on police work a very large portion of the calls consist of complaints involving neighborhood problems and that it is rarely necessary for a policeman to put on a burst of speed with his automobile. Therefore, the city always purchases cars for police work of the same type as for nonpolice work.

Pontiac, Michigan. Eight-cylinder, automatic transmission cars are used for almost all of the city services. A few manual shift, six-cylinder cars are in use, but they are used for light work in the health department. Pontiac favors the automatic transmission because the cars are in service much longer without repairs.

Grand Junction, Colorado. Grand Junction uses eight-cylinder engines on all its cars and maintains automatic transmissions on police cars because it eliminates clutch trouble, gives smoother starting, and reduces engine maintenance costs.

Phoenix, Arizona. Phoenix uses eight-cylinder, automatic transmission cars for police patrol and six-cylinder, manual shift cars for nonpolice work. The city has found that the six-cylinder, standard transmission cars cost 4.78 cents per mile to operate while the eight-cylinder, automatic transmission police cars cost 5.97 cents per mile to operate. When the police were driving standard transmission vehicles, new clutches had to be installed every 10,000 to 15,000 miles at a cost of approximately \$50 per job. The automatic transmissions are being driven approximately 70,000 miles before repairs are needed, and the repairs are costing about \$45 per job.

Long Beach, California. Long Beach uses automatic transmissions on all its cars and purchases six-cylinder cars for general city work and eight-cylinder cars for police work. Lower initial cost and economy in gas mileage are the advantages reported for six-cylinder autos while the police department needs the extra power of the eight-cylinder autos.

Sonoma County, California. Sonoma County reports that their cost experience has been 5.0 cents per mile for six-cylinder cars with standard transmissions, and 5.25 cents per mile for eight-cylinder, automatic transmission cars. These figures apply where Fords, Plymouths, and Chevrolets, are used. Sonoma County also has some Dodge, Pontiac, Buick, Oldsmobile, and Mercury cars in operation, but experience indicates a higher operating cost with these automobiles.

### Specifications and Prices

A complete listing of wholesale new car prices and factory suggested retail prices for all 1959 model cars are listed in *Car Fax, 1959*, published by the Car Fax Company, 550 Fifth Avenue, New York 36. This yearly publication lists wholesale dealer costs; official retail factory suggested prices; detailed equipment and accessory prices; approximate freight costs; and complete listing of standard and optional equipment. (The regular annual edition is \$2.00; the annual edition plus supplements is \$3.50.)

*Consumer Reports* has, from time to time, reported comparative studies of various makes of foreign and American cars and given results of tests on such features as automatic transmissions. (Published monthly by Consumers Union, Mount Vernon, New York, at \$5 per year.)

The federal government, through the General Services Administration, has published material which is of interest to local governments in evaluating their automotive cost records. Interim Federal Standard No. 00122a and Federal Specifications KKK-A-00811b and KKK-A-845 will provide standards and specifications used in the procurement of passenger carrying vehicles for the federal motor vehicle fleet.



### Conclusions

The purchase and use of small American and foreign automobiles for municipal service is increasing. Cities are interested in smaller cars because of constantly rising prices and the discontinuation of factory discounts to state and local governments for fleet purchases.

Cities that have had experience with smaller cars find that the reaction is generally good from the public, city officials, and city employees. Little adverse reaction has been expressed by automobile dealers handling the Big Three lines.

Advantages of Small Cars. Three principal advantages have been cited by cities in the use of smaller automobiles:

1. Cost. The purchase price is lower; the cars are more economical to operate; and maintenance and repairs are easier. The difference in operating costs alone have been reported as high as 1.0 cent per mile less than the cost for larger cars.
2. Handling. The smaller cars are easier to handle and maneuver, particularly in city traffic.
3. Parking. The smaller cars are easier to park, especially in parallel curb spaces which are becoming more common in cities. Some cities, with a large investment in municipal garages, find that smaller cars have increased the garage capacity considerably. This represents a substantial financial saving.

Disadvantages of Small Cars. The disadvantages indicated by cities for smaller cars generally fall into four classifications:

1. Unsuitable for Police Patrol. With rare exceptions, the smaller cars are not considered good for police patrol duty. Smaller cars lack the quick acceleration, power, and top speed of the larger cars, especially when the larger cars are equipped with automatic transmissions and V-8 engines. This still leaves plenty of opportunity for use of smaller cars by public health nurses, building inspectors, tax auditors, and other municipal employees.
2. Lower Resale Value. Since the smaller cars are not as well known and accepted by the general public, it may be that they will command a lower resale value. This could, however, change rather quickly as these cars (especially the Studebaker Lark and Rambler American) become better known.
3. Unsuitable for Pool Use. Some cities state that the smaller cars have not been good in automotive pools because of adverse driver reaction and abuse of the vehicles by drivers. This would seem to be something that could be corrected in time by driver training, driver experience, and better driver acceptance.
4. Domestic Purchases. A few cities mention specifically that they would not buy an automobile made outside the United States. This still leaves a big market for the Studebaker Lark, the Rambler American, and their competitors soon to be put on the market by General Motors, Ford, and Chrysler.

Sixes versus Eights: Standards versus Automatics. For most cities the six-cylinder car is the choice for all nonpolice work for several reasons: economy of operation, lower initial cost, and lower cost for maintenance and repairs. The eight-cylinder car is favored for police use because of better acceleration, more power and speed, and better service.

Much the same comments apply to standard and automatic transmissions. For nonpolice work, the standard transmission brings a lower initial cost and lower cost over the long run in services and repairs. It should be added that a few cities disagree sharply with this conclusion and state that the automatic transmission is more economical for all municipal automobiles.

Cities are unanimous that the automatic transmission is better for police cars, for two principal reasons: (1) there is less fatigue for the driver; and (2) it is cheaper in the long run because expensive repairs on the clutch and transmission are avoided. The automatic transmission for police cars also is favored because of aiding in fast acceleration.

The standard transmission, six-cylinder car generally operates for about 1.0 cent per mile



less than the automatic transmission eight-cylinder car. Most of the reporting cities have settled on the combination of standard transmission, six-cylinder cars for nonpolice work, and automatic transmission eight-cylinder cars for police patrol.

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*Note.* This report was prepared by Eleanor A. Schwab, staff member, the International City Managers' Association.



## Appendix A

## Cities Purchasing Smaller Cars

Data for cities which have leased or purchased small cars: L, Studebaker Lark; R, Rambler American; V, Volkswagen; F, other foreign cars.

City	L	R	V	F	City	L	R	V	F
Arizona					Richmond	x	x		
Mesa	x				Rochester	x			
Phoenix	x	x			Rushville	x			
Tucson		x			Scottsburg	x			
Winslow	x				Sellersburg	x			
Arkansas					South Bend	x			
Hope	x				Iowa				
California					Clarinda	x			
Alhambra	x				Cedar Rapids	x			
Burbank				x	Jefferson	x			
Fremont	x				Keokuk	x			
Long Beach	x				Sioux City	x			
Merced	x				Waterloo	x			
Nevada City	x				Webster City	x			
San Francisco		x			Kansas				
Vallejo	x				Larned	x			
Woodland	x				Ottawa	x			
Colorado					Pittsburg	x			
Colorado Springs	x				Topeka	x			
Connecticut					Kentucky				
Stratford	x				Louisville	x	x		
Florida					Louisiana				
Fort Lauderdale	x		x	x	Franklin	x			
Hallandale	x				Rayne	x			
Hollywood	x				Maryland				
Leesburg	x				College Park	x			
Miami		x			Massachusetts				
Orlando	x	x			Boston		x	x	
Sarasota	x				Michigan				
Tampa	x				Ann Arbor	x			
Georgia					Buchanan	x			
Baxley	x				Detroit	x			
Macon	x				Escanaba	x			
Illinois					Grand Haven	x			
Lansing	x				Kalamazoo	x			
Ottawa	x				Maple Rapids	x			
Staunton	x				Minnesota				
Streator	x				Winona	x			
Indiana					Mississippi				
Connersville	x				Columbia	x			
Michigan City	x				Jackson	x			
Mishawaka	x				Natchez	x			
Rensselaer	x				Water Valley	x			



City	L	R	V	F	City	L	R	V	F
Missouri					Pennsylvania				
Kansas City	x				Butler	x			
Springfield	x				Corapolis	x			
Montana					East Stroudsburg	x			
Butte	x				Erie	x			
New Hampshire					Harmarville	x			
Littleton	x				Latrobe	x			
New Jersey					Lebanon	x			
Atlantic City	x				Oxford	x			
Hackensack	x	x			Palmyra	x			
Irvington	x				Reading	x			
Plainfield	x				Topton	x			
New Mexico					West Chester	x			
Gallup	x				South Dakota				
Hobbs	x				Huron	x			
Portales	x				Tennessee				
New York					Elizabethton	x			
Endicott	x				Jackson	x			
Glen Cove	x				Memphis	x			
Plattsburg	x				Texas				
Port Ewen	x				Amarillo	x			
Rochester	x	x			Austin		x		
Troy	x				Dallas		x		
Watkins Glen	x				Henderson	x			
North Carolina					Midland	x			
Burlington	x				Perryton	x			
Kinston	x				San Antonio	x			
Raleigh	x				Utah				
North Dakota					Midvale	x			
Williston	x				Provo	x			
Ohio					Vermont				
Chardon	x				Randolph	x			
Cincinnati	x				Virginia				
Cleveland	x	x			Charlottesville	x	x		
Columbus	x				Richmond		x	x	x
Germantown	x				Roanoke	x			
Shaker Heights	x	x			Staunton	x			
Wooster	x				Washington				
Xenia	x				Bellingham	x			
Zanesville	x	x			Ellensburg	x			
Oklahoma					Snoqualmie	x			
El Reno	x				West Virginia				
Shattuck	x				Huntington		x		
Oregon					S. Charleston	x			
Medford	x				Williamson	x			
Portland	x				Wisconsin				
St. Helens	x				Amery	x			
					Bloomer	x			
					Merrill	x			
					Stanley	x			



Counties <sup>1</sup>	L	R	V	F	Counties <sup>1</sup>	L	R	V	F
California					Maryland				
Burlingame	x				Cambridge	x			
Napa	x				Hagerstown	x			
Sacramento	x				Michigan				
Stockton	x				Hastings	x			
Ukiah	x				New Jersey				
Watsonville	x				Bridgeboro	x			
Woodland	x				New Mexico				
Colorado					Aztec	x			
Craig	x				New York				
Florida					Islip	x			
Miami	x		x	x	Medford	x			
Sarasota	x				Poughkeepsie	x			
Georgia					Pulaski	x			
Augusta	x				Wassaic	x			
Idaho					Ohio				
Kellogg	x				Ashland	x			
Moscow	x				Bellaire	x			
Indiana					Caldwell	x			
Attica	x				Wooster	x			
South Bend	x				Oregon				
Iowa					Hood River	x			
Bellevue	x				Portland	x			
Kansas					Tennessee				
Garnett	x				Greensville	x			
Oberlin	x				Jackson	x			
Louisiana					Washington				
Winnfield	x				Longview	x			
					Puyallup	x			
					Tacoma	x			

<sup>1</sup>Sales to county governments made by dealers in these cities. County names not available.

Sources: (1) Studebaker-Packard Corporation, South Bend, Indiana; (2) John Barry Motors, St. Louis, Missouri; (3) Questionnaires sent to cities by MIS; and (4) American Motor Sales Corporation, Detroit, Michigan.

Information supplied by American Motor Sales Corporation, on the use of the Rambler American by cities and counties, arrived too late for inclusion in the above table, and therefore is listed separately as follows: Cities: Homewood and Opelika, Ala.; Dermott, Ark.; Beaumont, Coachella, Los Angeles, Pasadena, and Santa Marie, Cal.; Ferndale and Pueblo, Colo.; Danbury, Ellington, Georgetown, Hartford, Oxford, Springfield, and Watertown, Conn.; Dover, Del.; Eau Gallie, Orange City, and St. Petersburg, Fla.; Bainbridge, Griffin, Rome, and Thomasville, Ga.; Twin Falls, Idaho; Belvidere, Freeport, Jacksonville, Monticello, Niles, Rock Island, and Sycamore, Ill.; Crown Point, Ind.; Davenport, Maquoketh, and Ottumwa, Iowa; Caldwell, Great Bend, and St. Francis, Kan.; New Orleans, Opelousas, and Ruston, La.; Newton, Roxbury, Sandwich, and Somerville, Mass.; Marine City, Morenci, and Oscoda, Mich.; International Falls, Minn.; Grenada, Miss.; David City, Neb.; Montclair, N. J.; Binghamton, Bridgeport, Buffalo, Chappaqua, Elmsford, Lake Mohegan, Poughkeepsie, and Torrington, N. Y.; Greensboro and Wilson, N. C.; Bucyrus and Elyria, Ohio; Miami and Ponca City, Okla.; Grants Pass, Ore.; Altoona, Berryburg, Mont Alto, Taur, and Williamsport, Pa.; Aberdeen and Sioux Falls, S. D.; Garland, Texas; Brigham City, Utah; Alexandria and Barre, Vt.; Pasco, Pateros, Renton, Roslin, Spokane, Walla Walla, and Wenatchee, Wash.; Chippewa Falls, Edgerton, Germantown, Kenosha, Marshfield, Milwaukee, and West Milwaukee, Wis.; Casper and Cheyenne, Wyo. Counties: Huntsville, Ala.; Chico, Eureka, Hollister, Merced, and Red Bluff, Cal.; Grand Rapids and St. Joseph, Mich.; Hackensack, N. J.; Valhalla, N. Y.; Painesville, Ohio; Coquille and McMinnville, Ore.; Salt Lake City, Utah; Marion, Va.; Auburn, Ephrata, Kelso, Seattle, and Spokane, Wash.; Appleton, Baraboo, Kenosha, and Wisconsin Rapids, Wis.